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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,895	07/17/2003	Eric K. Hall	907A.0115.U1(US)	4996
29683	7590	10/18/2006	EXAMINER	
HARRINGTON & SMITH, LLP			MALEK, LEILA	
4 RESEARCH DRIVE			ART UNIT	
SHELTON, CT 06484-6212			PAPER NUMBER	
			2611	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/622,895	HALL ET AL.	
	Examiner	Art Unit	
	Leila Malek	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/17/2003</u> .                                              | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 07/17/2003 has been considered and made of record by the examiner.

### ***Specification***

2. The disclosure is objected to because of the following informalities: on page 7, lines 6 and 7, the relation between the matrices is not clear. It is not clear if they have been multiplied, or if they are just neighboring matrices. Appropriate correction is required.

### ***Claim Objections***

3. Claims 4-9, and 18 are objected to because of the following informalities: as to claims 4-9 and 18, "t<sub>1</sub>, t<sub>2</sub>, t<sub>n</sub>" needs to be replaced by "t<sub>1</sub>, t<sub>2</sub> ... t<sub>n</sub>". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-16, 19, and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 10 and 19, the relation between the matrices has not been

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described in a way to enable one ordinary skill in the art to use the same method. For instance, It is not clear if they have been multiplied, or if they are just neighboring matrices.

Claims 11-16 depend on claim 10; therefore they are rejected as well.

Claim 20 depends on claim 19; therefore it has been rejected as well.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17 and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As to claim 17, from the preamble of the claim, it appears that applicant is claiming an apparatus; however applicant in body of the claim describes a method for providing a plurality of spreading codes. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

5. Claims 1-9 are rejected under 35 U.S.C. 101 because: as to claim 1, the claimed invention is directed to non-statutory subject matter because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.). Applicant in claim 1, recites an algorithm, however there is no practical application disclosed for this algorithm (i.e. there is no use cited in the claim for the selected spreading code).

Claims 2-9 depend on claim 1; therefore they are rejected as well.

6. Claims 10-16 are rejected under 35 U.S.C. 101 because: as to claim 10, the claimed invention is directed to non-statutory subject matter because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.). Applicant in claim 10, recites an algorithm, however there is no practical application disclosed for this algorithm (i.e. there is no use cited in the claim for the formed PN codes).

Claims 11-16 depend in claim 10; therefore they are rejected as well.

7. Claims 17 and 18 are rejected under 35 U.S.C. 101 because: as to claim 17, the claimed invention is directed to non-statutory subject matter because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.). Applicant in claim 17, recites an algorithm, however there is no practical application disclosed for this algorithm (i.e. there is no use cited in the claim for the selected spreading code).

Claim 18 depends on claim 17; therefore it is rejected as well.

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8. Claims 19 and 20 are rejected under 35 U.S.C. 101 because: as to claim 19, the claimed invention is directed to non-statutory subject matter because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.).

Applicant in claim 19, recites an algorithm, however there is no practical application disclosed for this algorithm (i.e. there is no use cited in the claim for the formed PN codes).

Claim 20 depends in claim 19; therefore it is rejected as well.

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17 and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.). Applicant in claim 17 recites " a program storage device readable by a machine"; which is improper. Examiner suggests the use of "computer readable medium encoded with a computer program".

Claim 18 depends on claim 17; therefore it is rejected as well.

Claims 19 and 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, because as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.). Applicant in claim 19 recites "a program storage device readable by a machine"; which is improper. Examiner suggests the use of "computer readable medium encoded with a computer program".

Claim 20 depends in claim 19; therefore it is rejected as well.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Magnusson et al. (hereafter, referred as Magnusson) (US 6,163,524).

As to claims 1 and 17, Magnusson discloses a method for variable rate selecting spreading codes, the method comprising: providing a plurality of spreading code sets  $C_1, C_2 \dots C_n$  (See column 7, lines 50-56 and Fig. 4), wherein providing the plurality of spreading code sets further comprises: constructing each of the spreading code sets

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with at least one spreading factor (SF) level (see column 4, lines 49-57), wherein each SF level corresponds to a spreading factor  $2^k \text{SF}_{\min}$ , where k has a limit (e.g. for  $k=0\dots z$ , where z is a predetermined integer); assigning to each of the at least one SF levels in each of the spreading code sets  $C_1, C_2\dots C_n$ , a matrix node corresponding to  $N_2^k$  (see column 5, first paragraph) (since this matrix has not been described in the claim, the limitation has been interpreted broadly) for  $j=0\dots z$ , where k has a limit (e.g. for  $k=0\dots z$ , where z is a predetermined integer) (i.e. based on Fig. 4 for each SF level a matrix can be defined as described above); and selecting one of the plurality of spreading code sets  $C_1, C_2\dots C_n$  (see column 6, lines 1-16).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magnusson and Mousley (US 6,965,582).

As to claims 4 and 18, Magnusson discloses all the subject matters claimed in claims 1 and 17, except assigning each code sets  $C_1, C_2\dots C_n$  at least one dwell time  $t_1, t_2, \dots t_n$ , respectively; and selecting each sets  $C_1, C_2\dots C_n$  for the duration of its associated dwell time  $t_1, t_2, \dots t_n$ . Mousley discloses a radio communication system operating in accordance with a time division multiple access protocol assigns different fractional loading factors to different time slots (see the abstract). Mousley further



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discloses assigning different number of spreading codes to different time slots (dwell time) (see claim 2). Mousley does not disclose selecting each sets  $C_1, C_2 \dots C_n$  for the duration of its associated dwell time  $t_1, t_2, \dots t_n$ , however, inherently by selecting a group of spreading codes (see Magnusson) the selected group would be used for the duration of its associated dwell time. It would have been obvious to one of ordinary skill in the art at the time of invention to assign to each code sets  $C_1, C_2 \dots C_n$  at least one dwell time  $t_1, t_2, \dots t_n$ , respectively to make better use of the system capacity while reducing the interference in the system as suggested by Mousley (see column 2, lines 16 and 17).

***Allowable Subject Matter***

12. Claims 21 and 22 allowed. The following is a statement of reasons for the indication of allowable subject matter: As to claim 21, a comprehensive search of prior art of record failed to teach, either alone or in combination, an apparatus comprising: a radio base unit capable of bi-directional wireless multirate communications with a plurality of subscriber units, each subscriber unit having a subscriber unit data rate; and a controller for reordering: a Hadamard matrix by exchanging columns and rows of the first Hadamard matrix in accordance with at least one first predetermined reordering code to produce a first reordered PN code set having improved spectral properties; at least two second Hadamard matrices by exchanging columns and rows of each of the second Hadamard matrices in accordance with at least one second predetermined reordering code to produce at least two second reordered PN code sets; and a modulator for modulating the first reordered PN code set with each of the second

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PN code sets to generate at least two usable PN code sets for modulating a data signal of the subscriber units as a function of the subscriber unit data rate.

**Conclusion**

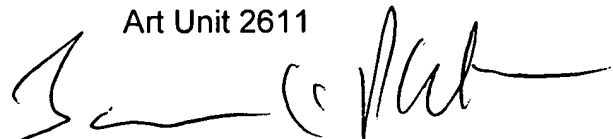
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

L.M

Leila Malek  
Examiner  
Art Unit 2611



JAY K. PATEL  
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